

Product Data Sheet

Product Name: Lamotrigine

Cat. No.: GC14764

Chemical Properties

Cas. No. 84057-84-1

Chemical Name 6-(2,3-dichlorophenyl)-1,2,4-triazine-3,5-diamine

SMILES C1=CC(=C(C(=C1)Cl)Cl)C2=C(N=C(N=N2)N)N

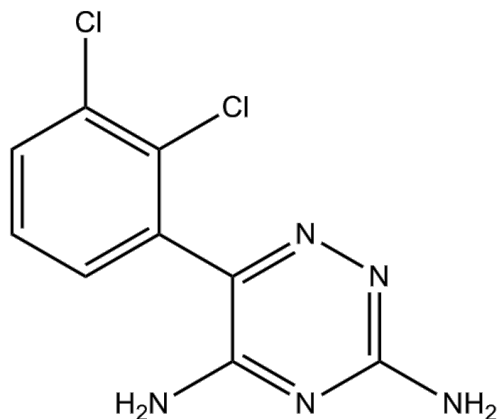
Formula $C_9H_7Cl_2N_5$ M.Wt 256.09

Solubility $\geq 12.3\text{mg/mL}$ in DMSO Storage Store at -20°C , protect from light

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Lamotrigine(BW430C) is a novel anticonvulsant drug for inhibition of 5-HT and sodium channelTarget: Sodium ChannelLamotrigine stabilises presynaptic neuronal membranes by blockade of voltage-dependent sodium channels, thus preventing the release of excitatory neurotransmitters, particularly glutamate and aspartate [1]. In rat cerebral cortex tissue incubated with veratrine 10 mg/L, lamotrigine is twice as potent in inhibiting the release of glutamate and aspartate ($\text{ED}_{50} = 5.38\text{ mg/L}$ for each) than the release of GABA ($\text{ED}_{50} = 11.2\text{ mg/L}$), and is much less potent in inhibiting

Caution: Product has not been fully validated for medical applications. For research use only.

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acetylcholine release ($ED_{50} = 25.6$ mg/L) when cortical slices is exposed to veratrine 75 mg/L. Basal glutamate release is unaffected [2]. Lamotrigine inhibits high-frequency sustained repetitive firing of sodium-dependent action potentials, indicating a direct effect on voltage-activated sodium channels [3]. Lamotrigine (Lamictal), a phenyltriazine derivative, is a well established anticonvulsant agent that has shown efficacy in the prevention of mood episodes in adult patients with bipolar I disorder. lamotrigine significantly delayed time to intervention for a depressive episode and showed limited efficacy in delaying time to intervention for a manic/hypomanic episode, compared with placebo. Lamotrigine is generally well tolerated [4].

References:

- [1]. Goa, K.L., S.R. Ross, and P. Chrisp, Lamotrigine. A review of its pharmacological properties and clinical efficacy in epilepsy. *Drugs*, 1993. 46(1): p. 152-76.
- [2]. Leach, M.J., C.M. Marden, and A.A. Miller, Pharmacological studies on lamotrigine, a novel potential antiepileptic drug: II. Neurochemical studies on the mechanism of action. *Epilepsia*, 1986. 27(5): p. 490-7.
- [3]. Cheung, H., D. Kamp, and E. Harris, An in vitro investigation of the action of lamotrigine on neuronal voltage-activated sodium channels. *Epilepsy Res*, 1992. 13(2): p. 107-12.
- [4]. Goldsmith, D.R., et al., Lamotrigine: a review of its use in bipolar disorder. *Drugs*, 2003. 63(19): p. 2029-50.

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